This document was submitted to EPA by a registrant in connection with EPA's evaluation of this chemical, and it is presented here exactly as submitted.

A portion of this document (Pages 3-7 and page 48) has been claimed confidential. This document is releasable to persons who submit a signed “Affirmation of Non-Multinational Status” form.

February 18, 2000

Ms. Carmelita White, Review Manager
Special Review and Reregistration Division (H-7508C)
Office of Pesticide Programs
US Environmental Protection Agency
Room 266A, Crystal Mall 2
1921 Jefferson Davis Highway
Arlington, VA 22202

Subject: Oxamyl Preliminary RED Chapters and Risk Assessments
30 Day Gross Error Check
Claims of CBI
Planned Studies

Dear Ms. White:

Thank you for your letter of Jan. 14, 2000 and the accompanying preliminary RED chapters and risk assessments for oxamyl, which I received on January 20, 2000. Herein are DuPont Agricultural Products comments on gross errors, additional comments in advance of the 60-day comment period, claims of CBI and a list of planned studies.

Gross Errors

Your letter instructed us to notify you of gross errors, which were defined to "include, but are not limited to, mathematical, computational, typographical, or other similar errors." We believe gross errors also include information that is missing, not reviewed, not included, not updated, or statements that are not consistent with Agency policy or prior precedent. We have reviewed all of the documents you sent us and offer these comments. We have identified what we believe are gross errors for each preliminary RED chapter and risk assessment. If we have additional comments beyond the scope of the definition of gross errors, we have placed them on the pages immediately following the gross error section for that chapter. I hope the organizational structure for our comments will make it easier for the RED team members to review their sections.

Claim of Confidential Business Information

We make no claim of Confidential Business Information (CBI) in any of the draft RED chapters and assessments provided. However, we do claim Attachment 1 of this letter as CBI.

On-going, Planned or Other Studies

Concurrent with the submission of this letter, we are submitting five studies. Two of the studies provide additional information about the degradation of oxamyl in the environment. They support the Agency's assumptions about oxamyl. Please find enclosed:

AMR 2889-93 Field Soil Dissipation of Oxamyl Following Application of Vydate® L Insecticide

AMR 3143-94 Degradability and Fate of 1-14C Oxamyl in Water/Sediment Systems

We are also enclosing three studies that are DuPont's responses to the dislodgeable foliar residue study reviews that you sent to us on November 3, 1999. These supplementary reports provide our position on the data used in the Occupational Exposure chapter. Please enclosed find:

AMR 4391-97, Supp. 1 Dissipation of Dislodgeable Foliar Residues of Oxamyl from Citrus Following Application of Vydate® L Insecticide in the USA – Season 1997.

AMR 4392-97, Supp. 1 Dissipation of Dislodgeable Foliar Residues of Oxamyl from Tomatoes Following Application of Vydate® L Insecticide in the USA – Season 1997.

AMR 4393-97, Supp. 1 Dissipation of Dislodgeable Foliar Residues of Oxamyl from Cucumbers Following Application of Vydate® L Insecticide in the USA – Season 1997.

We also have plans to submit the following 2 studies:

Carbamate Marketbasket Survey Final Report – estimated submission is April 30, 2000

Acute Neurotoxicity No Effect Dose Definition Oral Study – estimated submission is September 1, 2000. This study will refine the NOEL for the acute oral neurotoxicity study. Currently, the NOEL is 0.1 mg/kg and the LOEL is 0.75 mg/kg. The new study will test doses in between the current NOEL and LOEL. This study will have a significant impact on the acute dietary risk. If the Agency continues to use the acute neurotoxicity endpoint to establish the inhalation endpoint, which we believe is inappropriate, (see comment 5 in the Gross Errors in the Report of the Hazard Identification Assessment Review Committee section), this study's results would also impact the occupational exposure risk assessment.

Please call me if you have any questions at 302-992-6260.

Sincerely,

Charles S. Baer, Ph.D.
Product Registration Manager

Pages 3-7 have been claimed confidential. This document is releasable to persons who submit a signed “Affirmation of Non-Multinational Status” form.

Attachment 2

March 26, 1993 Letter to the Agency with Supplemental Information
Regarding the Alleged Death of Four Cows Following Exposure to Oxamyl

8768

DUPONT

AGRICULTURAL PRODUCTS
Walker's Mill, Barley Mill Plaza
P.O. Box 80038
Wilmington, DE 19880-0038
Registration & Regulatory Affairs
Fax: 302-992-6470

March 26, 1993

Document Processing Desk 6(a)(2)
Office of Pesticide Programs (H-7504C)
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460-0001

Subject: *Submission of Supplemental Information*
Report of Results of Investigative Work and
Follow-up to November 16, 1992 Letter
Du Pont Vydate L Insecticide/Nematicide (EPA Reg. No. 352-372)
Du Pont Vydate CLV Insecticide/Nematicide (EPA Reg. No. 352-532)
Du Pont Oxamyl Technical 42 Insecticide/Nematicide (EPA Reg. No. 352-400)

To Whom It May Concern:

In a letter dated November 16, 1992 we notified the Agency via the 6(a)(2) process of the death of four cows in Idaho that was alleged to involve oxamyl. At this time we are submitting additional information based on further work DuPont and the State of Idaho Department of Agriculture have done. Based on the data presented in this document we do not believe oxamyl was involved in the death of the cows.

Enclosed Appendix I is the reports and findings of the State of Idaho Department of Agriculture's investigation. Several important points are included in these documents. In summary:

- Only two cows are listed as having died instead of four. (Two of the cows recovered)
- The two cows that survived were both older and they exhibited signs of toxicity two days after the first cow died. This is not typical of carbamate poisoning.

9368

- Oxamyl was suspected based on laboratory results of one kidney sample.

- Gravel was also found in the bowel. In one area of the feed lot gravel had been deposited along a fence line after the county road crew had seal-coated the road. Gravel was also missing from around the bottom of a utility pole that had recently been treated. Depressions caused by animal muzzles being pressed into the ground were also seen around the utility pole/roadway fence line.

- The utility pole has recently been treated with toxic wood preservatives.

- A chemigation site was also within the animals feed area. Partially filled containers were found at the chemigation site.

- Soil samples taken from both the roadway/fence line and chemigation areas were analyzed by the EPA and no oxamyl residues were detected.

- All agricultural chemical dealers in the area were contacted. None had any record of Vydate® being on-hand or sold during the last several years.

Dr. James Baker, an Idaho State Department of Agriculture toxicologist clearly outlined the situation in the background section of his report. It states, in part;

"Based upon this review I would not be able to conclude that organophosphate pesticide poisoning was the cause for the loss of dairy herd animals and the illness associated with other animals in the dairy herd. Several of the findings are more indicative of other types of toxicity. Unfortunately, the clinical, laboratory and field investigations focused only on a possible OP incident. The initial diagnosis became the final explanation without excluding other possible explanations, i.e. a ruling hypothesis."

In Appendix II are the results of the analysis DuPont conducted on the contents of the containers found near the chemigation equipment. Our results shown no oxamyl present in the containers. Rather only S-ethyl dipropylthiocarbamate, the active ingredient of Eptam® Herbicide.

In Appendix III is a letter from the University of Idaho Analytical Laboratory. Note, the analytical method used to identify oxamyl was not the EPA approved analytical method. It is also curious to note that the active ingredient of Eptam has a similar chemical backbone to oxamyl and may account for the similar fragmentation pattern seen in the GC method.

In Appendix IV are the results from our analysis of the kidney sample obtained from the University of Idaho laboratory (VSP92-53). This is the same kidney sample that the University of Idaho Analytical Laboratory analyzed and concluded contained 0.07 ppm of oxamyl. Our analysis showed no detectable level of (< 0.01ppm) oxamyl.

In Appendix V are toxicity data for the three chemicals used by the utility company to treat their utility poles.

When all of the above data are considered we agree with Dr. Baker's conclusion that the evidence is too weak to reach any conclusion about the cause of the cows deaths. And, Dr. Baker reached his conclusion without the benefit of knowing the results of any of our analyses. Oxamyl was alleged to be the cause based on limited analytical data and the veterinarian's hypothesis. We believe both have been shown to be highly questionable.

We believe the cow's deaths cannot, by any factual information, be linked to any cause. The cow's deaths have been attributed to oxamyl with no evidence to support it. Based on all the data given herein, we ask the Agency to remove this incident from the records of oxamyl.

Sincerely,

Charles S. Baer

Charles S. Baer, Ph.D.
Product Registration Manager

11768

APPENDIX I

State of Idaho Department of Agriculture Investigation Report

12768

STATE OF IDAHO
DEPARTMENT OF AGRICULTURE

CECIL D. ANDRUS
Governor
W. G. NELSON
Director

28 December 1992

Ronald L. Yoder
Du-Pont Company
10839 Onondaga
Boise, Idaho 83709

RE: Approval to Examine Records

Dear Mr. Yoder:

On 23 December 1992, the Department of Agriculture received your request to examine the following records:

Pesticide Investigation ID # 93004

Your request has been approved.

Sincerely,

Robert Spencer

Robert Spencer, Supervisor
Education and Compliance Bureau

cc: ID# 93004

13368

COMPLAINT/INVESTIGATION INFORMATION FORM

INVESTIGATION NUMBER: #ID 93004

COMPLAINT TAKEN BY: Bob Spencer

TODAY'S DATE: October 21, 1992 TIME: 9:00 am

NOTIFIED BY:
Jeff Heins, DVM
Rt. 2 Box 212
Rupert IDAHO 83350
WORK- 436-9818 HOME-

COMPLAINANT:
Dean Shaw
Rt. 4
Rupert IDAHO 83350
WORK- HOME-

ALLEGED COMPANY: Unknown
ALLEGED PERSON: Unknown

IDAHO
WORK- HOME-

ALLEGED CHEMICAL/S: Vydate (Oxamyl)

DATE OF INCIDENT: Approximately Sept. 23, 1992
LOCATION OF INCIDENT:

COMPLAINT: Dairy herd began to drop off on milk production and eventually 2 cows died. Kidney samples analyzed positive, .07 Oxamyl. Herd is fed in free stalls most of the time, but were allowed to feed on grain stubble during part of the day.

DIRECTIONS:

INSPECTOR NAME: Jim Jurgens
INSPECTOR NOTIFIED: Yes
DAY: October 21, 1992
TIME: 9:05 am
BY WHOM: Bob Spencer

OTHER INFORMATION: Check types of feed and silage pit area (if silage is used) for possible spill. See attached lab report.

14968

FOLLOWUP INVESTIGATION INFORMATION FORM

INVESTIGATION NUMBER: 93004

COMPLAINT CALL TAKEN BY: _____

TODAY'S DATE: _____ TIME: _____

NOTIFIED BY: Jeff Heins DVM Rupert Animal Hosp.
Rt 2 Box 212
Rupert, ID 83350
PHONE W- 436-9818 H- _____

COMPLAINANT: Dean Shaw
Rt 4
Rupert, ID 83350
PHONE W- _____ H- _____

DIRECTIONS: _____

ALLEGED APPLICATOR: _____

ALLEGED CHEMICALS: _____

COMPLAINT: _____

DATE OF INCIDENT: Approx Sept 23rd

LOCATION OF INCIDENT: _____

INSPECTOR NAME: _____

INSPECTOR NOTIFIED: DATE _____ TIME _____ BY WHOM _____

15768

STATE OF IDAHO
DEPARTMENT OF AGRICULTURE

CECIL D. ANDRUS
Governor

To: Bob Spencer
Education and Compliance Supervisor
Division of Agricultural Technology

From: Jim Jurgens
Agrichemical Analyst
Division of Agricultural Technology

RECEIVED
NOV 2 4 1992
DIV. OF AG. TECH.

Date: October 23, 1992

Subject: 93 FOL 004

Complainant: Dean Shaw
Rt 4
350 E. 400 N.
Rupert, Idaho 83350
(208) 436-6101
(208) 436-0273

Narrative:

On October 23, 1992, I travelled to the Rupert Animal Hospital in Rupert where I presented my Idaho State Department of Agriculture credentials to veterinarian, Dr. Jeff Heins. Dr. Heins had sent a sample of animal tissue to the University of Idaho toxicology lab in Moscow which had indicated the presence of Oxamyl. Attachment #1 is a 5-page summary of the lab analysis. I told Dr. Heins that I was looking into the circumstances surrounding the case. Dr. Heins' address is Rt. 2 Box 212, Rupert, Idaho 83350. His telephone number is (208) 436-9818.

Dr. Heins told me that he had been called to look at a dead cow at the Dean Shaw farm on September 22, 1992 (Attachment #2). He said that while he was performing an autopsy on the cow, another cow exhibited signs of toxicity "(frothy at the mouth, labored breathing and a high temperature)" and actually died during it's examination (Attachment #3). Altogether, he thought 4 cows had been affected including the two that died. Attachments #4 & #5 describe examinations of the remaining 2 cows. The first two cows were first calf heifers while the latter two were older cows and did not exhibit toxic signs until two days later. I have noted in past poisoning cases a response delay and possible decrease in the amount of toxic symptoms exhibited by older animals. Those differences, I believe, can be explained by a number of criteria including the relative metabolism rates of the different age groups as well as the difference in aggressiveness allowing the younger animals a larger dosage. Dr. Heins told me that he believed the cows' deaths to be related to the oxamyl found in the tissue/organ

samples he had taken. The most common pesticide with oxamyl in it is Vidate. The doctor told me that during the autopsies, there was a very strong odor in the bowel area where he also found some gravel.

I travelled to the Shaw farm in Rupert the same day where I presented my Idaho State Department of Agriculture credentials to Mr. Dean Shaw. I told Mr. Shaw that I was there to look into the mysterious death of his dairy cows.

Mr. Shaw told me that his cows had remained on dry lot until the cows were turned out on barley stubble. Within one week, the first symptoms occurred and the first cow was dead 12 hours later, he said. He told me that he then, fearing that there was something along the fence line, built another fence 15 feet inside the existing fence on both the south and west sides of the field with a single "hot" wire (Photographs #1 - #2). Since that time, no cows have been sick or have died. I asked Mr. Shaw if there had been any other changes in the animals' feed or habitat. He said there hadn't been. The entire herd had been fed the same hay during the entire ordeal and only the four had been affected, he said. The herd had been fed rolled barley and hay. No soybean, cotton seed, or bean products had been fed, he told me.

Mr. Shaw told me that the field had been planted to beans during 1991 with Eptam and Treflan being applied. Harmony and Express had been applied this year.

I walked the entire pasture looking for empty containers, ground stains, bare soil, spilled grain and etcetera and found only two areas that appeared suspect.

The first was the "neighbor's chemigation" site immediately adjacent to the fence bordering the south of the Shaw farm. According to Mr. Shaw, the farm was owned by Mr. Alex McKinley until it's purchase in the spring of 1992 by Mr. Roger Crane. Prior to the sale of the property, chemigation had been conducted at the site but none had been done this year Mr. Shaw told me. I saw no stains on the ground but, as the photographs indicate, the ground in the area was free of vegetation and was accessible to the animals prior to the construction of the secondary fence. I contacted Mr. Crane who told me that he had applied nothing but some Round-Up Herbicide to the fence line. I told Mr. Crane that should he decide to chemigate from the site in the future he must

first obtain a license and then upgrade the chemigation equipment to meet requirements. Photographs #3 - #5 were taken of the "chemigation" equipment I found in place. It was not being used at the time of my visit.

I found a second area I considered as suspect. This area, like the first, was along the exterior of the two fences although, as the map indicates, it was along the west border. The ground in this area was adjacent to a utility's power pole and had several areas that were "hollowed out" in the shape of an animal's muzzle in the same way that a salt lick becomes "hollowed out" after continued licking. The pole was intact. The county had recently seal-coated the adjacent roadway and brushed the excess gravel onto the fence line. Around the pole, there was an obvious void of the gravel I found along the rest of the fence line, possibly accounting for the gravel the vet found in the intestines of the autopsied cows. Photographs #6 - #8 were taken of the area around the pole. In the photos, you will notice a "tar paper" like wrap around the pole with a plug just above (Photograph #9).

Using previously unused poly gloves, I placed a soil sample from each of the "suspect" areas in previously unused 1 quart sample jars and sealed them in previously unused poly bags. The first sample was taken from the pole area and was identified "93-004, 10/23/92, Pole, J.J.". It was sealed with EPA label "251235, 10/23/92", signed, "Jim Jurgens, Inspector". The remaining sample was identified "93-004, 10/23/92, Fence, J.J.", and sealed with EPA label "251236, 10/23/92,", signed, "Jim Jurgens, Inspector". Both samples were cooled immediately, frozen within 3 hours and forwarded to the WSDA lab in Yakima, Washington for analysis for Oxamyl. The results of that analysis are pending.

I later contacted Mr. Dick Hageman, an engineer with the power company for an explanation of the treatment the pole had received. I presented Mr. Hageman who works for Rural Electric at Rt. 2 Box 60, Rupert, Idaho 83350, with my Idaho State Department of Agriculture credentials. He explained that because many of the poles were beginning to rot inside, they were bored out and any one of three preservative filled capsules were placed in them. Those preservatives are "Mitc-Fume" containing 97% Methylisothiocyanate, "Woodfume" with 32.7% sodium methyl dithiocarbamate, and "Timberfume" containing 99% Chloropicrin. The hole was then plugged and a moisture barrier was wrapped around the base of the pole. Mr. Hageman provide me with a description of the procedure

and products used in the application **(Attachment #6)**.

During the succeeding weeks, I contacted all dealers in the area and found that none had any record of Vidate being on hand or sold during the last several years.

_____

Jim Jurgens, Inspector Date

19868

UNIVERSITY OF IDAHO ANALYTICAL LABORATORY

Holm Research Center
Moscow, ID 83843
PHONE (208) 885-7081 FAX (208) 885-8937

Attachment #1
93 COL 004
October 23, 1992
J. Jepson, Inspector

Certificate of Analysis - Veterinary Toxicology

Submitted by:

Jeff Heins
Rupert Animal Hospital
Route 2, Box 212
Rupert ID 83350

UIAL Case #:	VSP92-53
Submitter Case #:	92-T0647
Group:	VETTOX
Date Received:	09-25-92
Report Status:	Final
Species:	Bovine

Owner: Dean Shaw

Veterinary Diagnostic Toxicology:

Oxamyl was detected in the kidney sample submitted. Oxamyl is a carbamate and an acetylcholinesterase inhibitor. Oxamyl is used as an insecticide, nematicide, and acaricide on many field crops, vegetables, fruits, and ornamentals.

Date: 10.5.92

Patricia A. Talcott, DVM, PhD.
Department of Food Science and Toxicology

20768

UNIVERSITY OF IDAHO ANALYTICAL SYSTEM
Certificate of Analysis - Veterinary Toxicology

UIAL#: Submitter ID:

V9202376 Shaw
Liver

HMTS	Mo	Zn	Pb	Cd	Fe	Cu	Mn
UNITS	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g
(EDL)	(0.12)	(0.06)	(0.15)	(0.05)	(0.18)	(0.03)	(0.03)
RESULTS	0.69	45.80	0.37	0.03	117.00	82.70	1.95

V9202376 Shaw
Liver

TEST	RESULTS	(EDL)	UNITS
Arsenic	0.031	(0.002)	ug/g

V9202376 Shaw
Liver

TEST - OP/ON SCREEN	RESULTS	(EDL)	[UNITS]
Diazinon	ND	(0.01)	ug/g
Disulfoton	ND	(0.01)	ug/g
Atrazine	ND	(0.02)	ug/g
Simazine	ND	(0.02)	ug/g
Terbufos	ND	(0.02)	ug/g
Ethoprop	ND	(0.02)	ug/g
Merphos	ND	(0.03)	ug/g
Ametryn	ND	(0.05)	ug/g
Prometryn	ND	(0.06)	ug/g
Prometon	ND	(0.07)	ug/g
Terbutryn	ND	(0.07)	ug/g
Pebulate	ND	(0.08)	ug/g
EPTC	ND	(0.10)	ug/g
Tebuthiuron	ND	(0.10)	ug/g
Molinate	ND	(0.11)	ug/g
Triademefon	ND	(0.15)	ug/g
Cycloate	ND	(0.16)	ug/g
Diphenamide	ND	(0.20)	ug/g
Fenamiphos	ND	(0.20)	ug/g
Napropamide	ND	(0.25)	ug/g
Mevinphos	ND	(0.25)	ug/g
Chlorpropham	ND	(0.35)	ug/g
Metribuzin	ND	(0.40)	ug/g
Pronamide	ND	(0.42)	ug/g
Metolachlor	ND	(0.50)	ug/g
Carboxin	ND	(0.70)	ug/g
Norflurazon	ND	(0.70)	ug/g
Alachlor	ND	(1.00)	ug/g
Hexazinone	ND	(1.00)	ug/g
Fenarimol	ND	(1.00)	ug/g

NA - Not Applicable ND - None Detected EDL - Estimated Detection Limit QNS - Quantity Not Sufficient for Analysis

* -- Lower detection limit elevated and reduced accuracy due to small sample size. Minimum of 1 ml required.

21968

UNIVERSITY OF IDAHO ANALYTICAL SYSTEM
Certificate of Analysis - Veterinary Toxicology

UIAL#: Submitter ID:

TEST - OP/ON SCREEN	RESULTS	(EDL)	[UNITS]
Butachlor	ND	(1.00)	ug/g
MGK 624	ND	(1.00)	ug/g
Methamidophos	ND	(0.10)	ug/g
34			
35			
Spike Recovery	107		%
Blank Contamination	ND		
38			

V9202378 Shaw
Kidney

HMTS	Mo	Zn	Pb	Cd	Fe	Cu	Mn
UNITS	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g
(EDL)	(0.12)	(0.06)	(0.15)	(0.05)	(0.18)	(0.03)	(0.03)
RESULTS	0.08	18.30	ND	0.09	49.70	3.41	0.64

V9202378 Shaw
Kidney

TEST	RESULTS	(EDL)	UNITS
Arsenic	0.009	(0.002)	ug/g

V9202378 Shaw
Kidney

TEST - OP/ON SCREEN	RESULTS	(EDL)	[UNITS]
Diazinon	ND	(0.01)	ug/g
Disulfoton	ND	(0.01)	ug/g
Atrazine	ND	(0.02)	ug/g
Simazine	ND	(0.02)	ug/g
Terbufos	ND	(0.02)	ug/g
Ethoprop	ND	(0.02)	ug/g
Merphos	ND	(0.03)	ug/g
Ametryn	ND	(0.05)	ug/g
Prometryn	ND	(0.06)	ug/g
Prometon	ND	(0.07)	ug/g
Terbutryn	ND	(0.07)	ug/g
Pebulate	ND	(0.08)	ug/g
EPTC	ND	(0.10)	ug/g
Tebuthiuron	ND	(0.10)	ug/g
Molinate	ND	(0.11)	ug/g
Triademefon	ND	(0.15)	ug/g
Cycloate	ND	(0.16)	ug/g
Diphenamide	ND	(0.20)	ug/g
Fenamiphos	ND	(0.20)	ug/g
Napropamide	ND	(0.25)	ug/g

NA - Not Applicable ND - None Detected EDL - Estimated Detection Limit QNS - Quantity Not Sufficient for Analysis

* -- Lower detection limit elevated and reduced accuracy due to small sample size. Minimum of 1 ml required.

UNIVERSITY OF IDAHO ANALYTICAL SYSTEM
Certificate of Analysis - Veterinary Toxicology

UIAL#: Submitter ID:

TEST - OP/ON SCREEN	RESULTS	(EDL)	[UNITS]
Mevinphos	ND	(0.25)	ug/g
Chlorpropham	ND	(0.35)	ug/g
Metribuzin	ND	(0.40)	ug/g
Pronamide	ND	(0.42)	ug/g
Metolachlor	ND	(0.50)	ug/g
Carboxin	ND	(0.70)	ug/g
Norflurazon	ND	(0.70)	ug/g
Alachlor	ND	(1.00)	ug/g
Hexazinone	ND	(1.00)	ug/g
Fenarimol	ND	(1.00)	ug/g
Butachlor	ND	(1.00)	ug/g
MGK 624	ND	(1.00)	ug/g
Methamidophos	ND	(0.10)	ug/g
34			
35			
Spike Recovery	107		%
Blank Contamination	ND		
38			

V9202378 Shaw
Kidney

TEST - EPA 531.1	RESULTS	[EDL]	UNITS
Aldicarb	ND	[1]	ug/g
Aldicarb Sulfone	ND	[1]	ug/g
Aldicarb Sulfoxide	ND	[1]	ug/g
Baygon (Propoxur)	ND	[1]	ug/g
Carbaryl	ND	[1]	ug/g
Carbofuran	ND	[1]	ug/g
3-Hydroxycarbofuran	ND	[1]	ug/g
Methiocarb	ND	[1]	ug/g
Methomyl	ND	[1]	ug/g
Oxamyl	.07		ug/g

V9202380 Shaw
Rumen contents

TEST - OP/ON SCREEN	RESULTS	(EDL)	[UNITS]
Diazinon	ND	(0.01)	ug/g
Disulfoton	ND	(0.01)	ug/g
Atrazine	ND	(0.02)	ug/g
Simazine	ND	(0.02)	ug/g
Terbufos	ND	(0.02)	ug/g
Ethoprop	ND	(0.02)	ug/g

NA - Not Applicable ND - None Detected EDL - Estimated Detection Limit QNS - Quantity Not Sufficient for Analysis

* – Lower detection limit elevated and reduced accuracy due to small sample size. Minimum of 1 ml required.

23768

UNIVERSITY OF IDAHO ANALYTICAL SYSTEM
Certificate of Analysis - Veterinary Toxicology

UIAL#: Submitter ID:

TEST - OP/ON SCREEN	RESULTS	(EDL)	[UNITS]
Merphos	ND	(0.03)	ug/g
Ametryn	ND	(0.05)	ug/g
Prometryn	ND	(0.06)	ug/g
Prometon	ND	(0.07)	ug/g
Terbutryn	ND	(0.07)	ug/g
Pebulate	ND	(0.08)	ug/g
EPTC	ND	(0.10)	ug/g
Tebuthiuron	ND	(0.10)	ug/g
Molinate	ND	(0.11)	ug/g
Triademefon	ND	(0.15)	ug/g
Cycloate	ND	(0.16)	ug/g
Diphenamide	ND	(0.20)	ug/g
Fenamiphos	ND	(0.20)	ug/g
Napropamide	ND	(0.25)	ug/g
Mevinphos	ND	(0.25)	ug/g
Chlorpropham	ND	(0.35)	ug/g
Metribuzin	ND	(0.40)	ug/g
Pronamide	ND	(0.42)	ug/g
Metolachlor	ND	(0.50)	ug/g
Carboxin	ND	(0.70)	ug/g
Norflurazon	ND	(0.70)	ug/g
Alachlor	ND	(1.00)	ug/g
Hexazinone	ND	(1.00)	ug/g
Fenarimol	ND	(1.00)	ug/g
Butachlor	ND	(1.00)	ug/g
MGK 624	ND	(1.00)	ug/g
Methamidophos	ND	(0.10)	ug/g
34			
35			
Spike Recovery	107		%
Blank Contamination	ND		
38			

Samples will be discarded one month after date of final report, unless otherwise requested.

NA - Not Applicable ND - None Detected EDL - Estimated Detection Limit QNS - Quantity Not Sufficient for Analysis

* -- Lower detection limit elevated and reduced accuracy due to small sample size. Minimum of 1 ml required.

Attachment #2
93 FOL 004
October 23, 1992
Jim Jurgens, Inspector

RUPERT ANIMAL HOSPITAL

DR. JEFF HEINS
200 SOUTH 200 WEST ROUTE #2 BOX 212
RUPERT, IDAHO 83350
OFFICE: 436-9818

2% SERVICE CHARGE ON ALL AMOUNTS OVER 30 DAYS PAST DUE.

NO. DATE Sept 22 1992

CUSTOMER Dean Shaw

SOLD BY	CASH	C.O.D	CHG	ON ACCT	MDSE RETD	PAID OUT
JH			/			

QTY.	DESCRIPTION	PRICE
	Call	
	Cow #77	
	Autopsy 1 cow + collect samples to determine cause of death	
	intestine - hemorrhagic, thin walled	
	lungs - emphysema	
	stomach contents - bad odor, full	
	liver, kidney - WNL	
	Postage + Handling for mailing samples to Reg I ~~TAX~~ lab -	
	TOTAL	

All claims and returned goods MUST be accompanied by th

28345 REC'D BY

PETERSON'S OFFICE PRODUCTS & SUPPLIES - RUPERT ID

25868

Attachment #3
93 FDL 004
October 23, 1992
Jim Jurgens, Inspector

RUPERT ANIMAL HOSPITAL

DR. JEFF HEINS
200 SOUTH 200 WEST ROUTE #2 BOX 212
RUPERT, IDAHO 83350
OFFICE: 436-9818

2% SERVICE CHARGE ON ALL AMOUNTS OVER 30 DAYS PAST DUE.

NO. DATE Sept 22 1992

CUSTOMER Dean Shaw

SOLD BY	CASH	C.O.D.	CHG	ON ACCT.	MDSE RETD	PAID OUT
JH						

QTY.	DESCRIPTION	PRICE
	Cont from tkt # 28345	
	Cow #80: frothy at mouth	
	Breathing hard + labored. 104[2]	
	Rx c 30cc [illegible]	
	30cc [illegible]	
	40cc Atropine IV + Subcut	
	3cc Epinephrine IV	
	Exam 2nd Cow Temp 106[2]	
	diarrhea; no rumen motility	
	frothy lungs + salivation	
	stool smells foul - OP poisoning	TAX
	died during exam	TOTAL

All claims and returned goods MUST be accompanied by this

28346 REC'D BY

PETERSON'S OFFICE PRODUCTS & SUPPLIES · RUPERT ID

26968

Attachment #4
93 FOL 004
October 23, 1992
Jim Jurgens, Inspector

RUPERT ANIMAL HOSPITAL

DR. JEFF HEINS
200 SOUTH 200 WEST ROUTE #2 BOX 212
RUPERT, IDAHO 83350
OFFICE: 436-9818

2% SERVICE CHARGE ON ALL AMOUNTS OVER 30 DAYS PAST DUE

NO. DATE Sept 23 19 92

CUSTOMER Dean Shaw

SOLD BY	CASH	C O D	CHG	ON ACCT	MDSE RETD	PAID OUT
JH			✓			

QTY.	DESCRIPTION	PRICE
	Call	
	Rec'd Comfort for other sick cows	
	- #80 - dead	
	- other cows from 9-23 look good	
	- 2 new addn cows off feed + dumpy	
	- Rec'd ✓ in morning if still off feed or worse	
	TOTAL	

All claims and returned goods MUST be accompanied by

28354 REC'D BY

PETERSON'S OFFICE PRODUCTS & SUPPLIES - RUPERT

27868

Attachment #5
93 FOL 004
October 23, 1992
Jim Jurgens, Inspector

RUPERT ANIMAL HOSPITAL

DR. JEFF HEINS
200 SOUTH 200 WEST ROUTE #2 BOX 212
RUPERT, IDAHO 83350
OFFICE: 436-9818

2% SERVICE CHARGE ON ALL AMOUNTS OVER 30 DAYS PAST DUE.

NO. 45 DATE Sept 30 99

CUSTOMER Dean Shaw

SOLD BY	CASH	C O D	CHG	ON ACCT	MDSE RETD	PAID OUT
JH			✓			

QTY.	DESCRIPTION	PRICE
	Exam + Rx Dry Cow at Hosp	
	105², TRR	
	calf ± 7+ mos	
	30 cc Cyosticillin	
	20 cc B Vitamin	
	5 Magnulay Boluses	
	8 cc Banamine	
	10-1-92 : Normal temp.	
	20 cc B Vitamin	
	5 Magnulay Boluses	
	2x 20 cc Cyosticillin	10 00
	Hospitalization + TAX Right	
	TOTAL	

All claims and returned goods MUST be accompanied by

28496 REC'D BY

PETERSON'S OFFICE PRODUCTS & SUPPLIES - RUPERT

28768

9. Fumigant

Either one of the three fumigants that follow are inserted in liquid or solid form, the preservative then converting into vapors. Application is to be made into known or suspected internal decay areas but not directly into a void where the vapor might escape into the surrounding air through checks. Fumigants will be applied in 7/8" holes drilled 12" - 15" deep at a steep angle so as not to penetrate the opposite side of the pole. Tight fitting treated wood plugs are to be used to seal all holes.

A. MITC-FUME™

Active ingredient: 97% Methylisothiocyanate. Application to follow label instructions. No restrictions on application locations.

B. WoodFume®

dithiocarbamate

Active ingredient: 32.7% sodium methyl dithiocarbamate. Application to follow label instruction. No restrictions on application locations.

C. TimberFume®

Active ingredient: 99% chloropicrin. Application to follow label instructions. For use in poles located in rural areas or more than 100' from a dwelling.

10. External (Preservative) Treatment

Material is to be OsmoPlastic® which is composed of 44.42% sodium fluoride, 3.1% potassium bichromate, 2.0% dinitrophenol, and 45.62% creosote plus 4.86% inerts. Application is to be approximately 1/16" thickness from base of excavation to approximately 3" above ground surfaces.

11. Wrapping

OsmoShield® moisture barrier is to be applied over preservative, covering that portion of the poles from 18" below ground to 4" above ground.

12. Backfilling

Excavated hole shall be generously refilled and tamped, when possible, so as to avoid possibility of subsequent settling leading to a depressed area.

13. Clean-up

No debris, loose dirt, etc. are to be left in pole area. Private property turf, bushes, etc., are to be replaced with care.

92-1783

Idaho Department of Agriculture
COLLECTION REPORT

1. TYPE SAMPLE	2. SAMPLE NO.
	№ 251236

3. DATE COLLECTED	4. PROJ CODE	5. REGION NO.	6. INSP NO.	7. REGISTRATION NO.	8. ESTABLISHMENT NO.
10/23/92	H-4	10	N/A	N/A	N/A

9. DATE(S) SHIPPED	10. FLAG
N/A	suspected Oxamyl

11. PRODUCT IDENTIFICATION (Name, Brand, O.C. Statement, Active Ingredients. Firm Name and Address, etc.)

1 quart jar of soil

12a. PRODUCER ESTABLISHMENT: Dean Shaw

b. STREET ADDRESS	c. CITY	d. STATE	e. ZIP CODE
Rt 2 Box 212	Rupert,	Idaho	83350

13a. DEALER: N/A

b. STREET	c. CITY	d. STATE	e. ZIP CODE

14a. SHIPPER: N/A

b. STREET ADDRESS	c. CITY	d. STATE	e. ZIP CODE

15 **RECORDS AND SAMPLE SENT TO** *(Specify location)*

a. ORIGINAL RECORDS	b. PRODUCING REGION COPY	c. SAMPLE
ISDA	10	Chem Lab, Yakima

d. SAMPLE DELIVERED TO:	e. DATE	f. B/L NO.
Greyhound Bus	11/10/92	N/A

16. LOT OR CODE NOS.: N/A

17. AMOUNT BEFORE SAMPLE: 1 quart jar of soil

18. DESCRIPTION OF SAMPLE AND METHOD OF COLLECTION: Previously unused poly gloves were used to place the sample into a previously unused 1 quart sample jar which was sealed in a previously unused poly bag.

19. SAMPLE PREPARED IN THE FOLLOWING MANNER: Sample was identified "93-004, 10/23/92, Fence, J.J.", polybagged & sealed with EPA label "251236, 10/23/92", signed, "Jim Jurgens, Inspector", cooled immediately, frozen within 3 hours.

20. RELATED SAMPLES COLLECTED FROM SAME SHIPMENT OR AT THE SAME PRODUCER ESTABLISHMENT: 251235

21. REASON FOR COLLECTION: Suspected Oxamyl

22. NOTICE OF INSPECTION ISSUED		23. RECEIPT FOR SAMPLES ISSUED	
	No		No

24. REMARKS

Investigation #93-004

25.	C	V	B	26. COLLECTION STA	27. COLLECTOR'S NAME *(Type)* AND SIGNATURE
$ N/A	☐	☐	☐	Jerome	Jim Jurgens

1. (White) SAMPLE COPY
2. (Yellow) INSPECTOR'S COPY

30968

Idaho Department of Agriculture COLLECTION REPORT				1. TYPE SAMPLE	2. SAMPLE NO. № 251236
3. DATE COLLECTED 10/23/92	4. PROJ CODE H-4	5. REGION NO. 10	6. INSP NO. N/A	7. REGISTRATION NO. N/A	8. ESTABLISHMENT NO. N/A
9. DATE(S) SHIPPED N/A			10. FLAG suspected Oxamyl		

11. PRODUCT IDENTIFICATION (Name, Brand, O.C. Statement, Active Ingredients. Firm Name and Address, etc.)

1 quart jar of soil

12a. PRODUCER ESTABLISHMENT Dean Shav			
b. STREET ADDRESS Rt 2 Box 212	c. CITY Rupert,	d. STATE Idaho	e. ZIP CODE 83350
13a. DEALER N/A			
b. STREET	c. CITY	d. STATE	e. ZIP CODE
14a. SHIPPER N/A			
b. STREET ADDRESS	c. CITY	d. STATE	e. ZIP CODE

15 RECORDS AND SAMPLE SENT TO *(Specify location)*

a. ORIGINAL RECORDS ISDA	b. PRODUCING REGION COPY 10	c. SAMPLE Chem Lab, Yakima
d. SAMPLE DELIVERED TO: Greyhound Bus	e. DATE 11/10/92	f. B/L NO. N/A

16. LOT OR CODE NOS. N/A

17. AMOUNT BEFORE SAMPLE 1 quart jar of soil

18. DESCRIPTION OF SAMPLE AND METHOD OF COLLECTION
Previously unused poly gloves were used to place the sample into a previously unused 1 quart sample jar which was sealed in a previously unused poly bag.

19. SAMPLE PREPARED IN THE FOLLOWING MANNER
Sample was identified "93-004, 10/23/92, Fence, J.J.", polybagged & sealed with EPA label "251236, 10/23/92", signed, "Jim Jurgens, Inspector", cooled immediately, frozen within 3 hours.

20. RELATED SAMPLES COLLECTED FROM SAME SHIPMENT OR AT THE SAME PRODUCER ESTABLISHMENT
251235

21. REASON FOR COLLECTION
Suspected Oxamyl

22. NOTICE OF INSPECTION ISSUED No	23. RECEIPT FOR SAMPLES ISSUED No

24. REMARKS

Investigation #93-004

25. $ N/A C ☐ V ☐ B ☐	26. COLLECTION STA Jerome	27. COLLECTOR'S NAME (Type) AND SIGNATURE Jim Jurgens

1. (White) SAMPLE COPY
2. (Yellow) INSPECTOR'S COPY

31768

HISTORY OF OFFICIAL SAMPLE

		1. SAMPLE NUMBER	2. REGISTRATION NUMBER
		251236	92 1783
		3. PRODUCT	Soil
4. LABORATORY	USDA Yakima		
5. DATE RECEIVED	11-92		
6. RECEIVED BY	NB		
7. RECEIVED FROM	Jungens		
8. SENT VIA	BUS		
9. SAMPLE CONDITION	good		
10. CONDITION OF SEALS	intact		
11. SEALED BY	same		
12. DATE SEALED	10-23		
13. PIECES RECEIVED	1		
14. PLACE STORED	Heller 2		
15. ASSIGNED BY	H. Moya		
16. ASSIGNED TO	R. Schoen		
17. DELIVERED BY	R. Schoen		
18. DATE DELIVERED	11/12/92		
19. NUMBER SUBS RECEIVED	1		
20. SUBS ANALYZED	1		
21. DATE SEAL BROKEN	11/12/92		
22. DATE RESEALED	11/12/92		
23. RESEALED BY	R. Schoen		
24. PLACE STORED	Freezer 2		
25. DATE JACKET SENT OUT	11-24-92		

26. REMARKS

32968

EPA Form 3540-17 (12-73) REPLACES PR FORM 1-136 WHICH IS OBSOLETE.

93004

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

REPORT OF ANALYSIS

1. SAMPLE NO.	2. DATE COLLECTED
251236	10-23-92
3. REGION	**4. EPA REG. NO.**
10	N/A
5. ESTABLISHMENT NO.	
N/A	

6. DESCRIPTION OF SAMPLE
One Quart jar of soil

7. NAME AND ADDRESS OF ESTABLISHMENT WHERE SAMPLE WAS COLLECTED *(Include ZIP code)*

Dean Shaw
Rt. 2 Box 212
Rupert, ID 83350

8. PRODUCT NAME
NA

9. LOT OR CODE NUMBER(s)
NA

10. NAME AND ADDRESS OF PRODUCER *(If different from 7 above)* *(Include ZIP code)*
NA

11. RESULTS OF ANALYSIS

Method of Analysis	Ingredient	Found
HPLC Carbamate Screen	Oxamyl	None Detected

Analyst: Royal G. Schoen, 11-24-92 R.S.

	Found
Oxamyl	
HPLC: 5u C-18 @ 42°C, 1.0mL/min	None Detected

MDL: .03ppm

12. LABORATORY COMMENTS

33968

13. SIGNATURE OF LAB SUPERVISOR	14. LABORATORY	15. DATE
Norma Moye	WSDA	11-24-92

EPA Form 3540-5 (Rev. 5-76) PREVIOUS EDITIONS ARE OBSOLETE.

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

REPORT OF ANALYSIS

1. SAMPLE NO.	2. DATE COLLECTED
251236	10-23-92
3. REGION	**4. EPA REG. NO.**
10	N/A
5. ESTABLISHMENT NO.	
N/A	

6. DESCRIPTION OF SAMPLE
One Quart jar of soil

7. NAME AND ADDRESS OF ESTABLISHMENT WHERE SAMPLE WAS COLLECTED *(Include ZIP code)*

Dean Shaw
Rt. 2 Box 212
Rupert, ID 83350

8. PRODUCT NAME
NA

9. LOT OR CODE NUMBER(s)
NA

10. NAME AND ADDRESS OF PRODUCER *(If different from 7 above)* *(Include ZIP code)*
NA

11. RESULTS OF ANALYSIS

Method of Analysis	Ingredient	Found
HPLC Carbamate Screen	Oxamyl	None Detected

Analyst: Royal G. Schoen, 11-24-92

	Bound
Oxamyl	
HPLC: 5u C-18 @ 42°C, 1.0mL/min	None Detected

NDL: .03ppm

12. LABORATORY COMMENTS

34768

13. SIGNATURE OF LAB SUPERVISOR	14. LABORATORY	15. DATE

EPA Form 3540-5 (Rev. 5-76) PREVIOUS EDITIONS ARE OBSOLETE.

92-1784

Idaho Department of Agriculture
COLLECTION REPORT

1. TYPE SAMPLE	2. SAMPLE NO.
	№ 251235

3. DATE COLLECTED	4. PROJ CODE	5. REGION NO.	6. INSP NO.	7. REGISTRATION NO.	8. ESTABLISHMENT NO.
10/23/92	H-4	10	N/A	N/A	N/A

9. DATE(S) SHIPPED	10. FLAG
N/A	suspected Oxamyl

11. PRODUCT IDENTIFICATION (Name, Brand, O.C. Statement, Active Ingredients. Firm Name and Address, etc.)

1 quart jar of soil

12a. PRODUCER ESTABLISHMENT
Dean Shaw

b. STREET ADDRESS	c. CITY	d. STATE	e. ZIP CODE
Rt 2 Box 212	Rupert,	Idaho	83350

13a. DEALER
N/A

b. STREET	c. CITY	d. STATE	e. ZIP CODE

14a. SHIPPER
N/A

b. STREET ADDRESS	c. CITY	d. STATE	e. ZIP CODE

15 **RECORDS AND SAMPLE SENT TO** *(Specify location)*

a. ORIGINAL RECORDS	b. PRODUCING REGION COPY	c. SAMPLE
ISDA	10	Chem lab, Yakima

d. SAMPLE DELIVERED TO:	e. DATE	f. B/L NO.
Greyhound Bus	11/10/92	N/A

16. LOT OR CODE NOS.
N/A

17. AMOUNT BEFORE SAMPLE
1 quart jar of soil

18. DESCRIPTION OF SAMPLE AND METHOD OF COLLECTION
Previously unused poly gloves were used to place the sample into a previously unused 1 quart sample jar which was sealed in a previously unused poly bag.

19. SAMPLE PREPARED IN THE FOLLOWING MANNER
Sample was identified "93-004, 10/23/92, Pole, J.J.", polybagged & sealed with EPA label "251235, 10/23/92", signed, "Jim Jurgens, Inspector", cooled immediately, frozen within 3 hours.

20. RELATED SAMPLES COLLECTED FROM SAME SHIPMENT OR AT THE SAME PRODUCER ESTABLISHMENT

21. REASON FOR COLLECTION
Suspected Oxamyl

22. NOTICE OF INSPECTION ISSUED	No	23. RECEIPT FOR SAMPLES ISSUED	No

24. REMARKS

Investigation #93-004

35968

25. $ N/A	C ☐ V ☐ B ☐	26. COLLECTION STA Jerome	27. COLLECTOR'S NAME *(Type)* AND SIGNATURE Jim Jurgens

1. (White) SAMPLE COPY

Idaho Department of Agriculture
COLLECTION REPORT

1. TYPE SAMPLE	2. SAMPLE NO.
	№ 251235

3. DATE COLLECTED	4. PROJ CODE	5. REGION NO.	6. INSP NO.	7. REGISTRATION NO.	8. ESTABLISHMENT NO.
10/23/92	H-4	10	N/A	N/A	N/A

9. DATE(S) SHIPPED	10. FLAG
N/A	suspected Oxamyl

11. PRODUCT IDENTIFICATION (Name, Brand, O.C. Statement, Active Ingredients. Firm Name and Address, etc.)

1 quart jar of soil

12a. PRODUCER ESTABLISHMENT
Dean Shaw

b. STREET ADDRESS	c. CITY	d. STATE	e. ZIP CODE
Rt 2 Box 212	Rupert,	Idaho	83350

13a. DEALER
N/A

b. STREET	c. CITY	d. STATE	e. ZIP CODE

14a. SHIPPER
N/A

b. STREET ADDRESS	c. CITY	d. STATE	e. ZIP CODE

15 **RECORDS AND SAMPLE SENT TO** *(Specify location)*

a. ORIGINAL RECORDS	b. PRODUCING REGION COPY	c. SAMPLE
ISDA	10	Chem lab, Yakima

d. SAMPLE DELIVERED TO:	e. DATE	f. B/L NO.
Greyhound Bus	11/10/92	N/A

16. LOT OR CODE NOS.
N/A

17. AMOUNT BEFORE SAMPLE
1 quart jar of soil

18. DESCRIPTION OF SAMPLE AND METHOD OF COLLECTION
Previously unused poly gloves were used to place the sample into a previously unused 1 quart sample jar which was sealed in a previously unused poly bag.

19. SAMPLE PREPARED IN THE FOLLOWING MANNER
Sample was identified "93-004, 10/23/92, Pole, J.J.", polybagged & sealed with EPA label "251235, 10/23/92", signed, "Jim Jurgens, Inspector", cooled immediately, frozen within 3 hours.

20. RELATED SAMPLES COLLECTED FROM SAME SHIPMENT OR AT THE SAME PRODUCER ESTABLISHMENT

21. REASON FOR COLLECTION
Suspected Oxamyl

22. NOTICE OF INSPECTION ISSUED	No	23. RECEIPT FOR SAMPLES ISSUED	No

24. REMARKS

Investigation #93-004

25. $	C V B	26. COLLECTION STA	27. COLLECTOR'S NAME *(Type)* AND SIGNATURE
N/A	☐ ☐ ☐	Jerome	Jim Jurgens 36768

1. (White) SAMPLE COPY
2. (Yellow) INSPECTOR'S COPY
3. (Pink) OFFICE COPY

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

REPORT OF ANALYSIS

1. SAMPLE NO.	2. DATE COLLECTED
251235	10-23-92
3. REGION	**4. EPA REG. NO.**
10	NA
5. ESTABLISHMENT NO.	
NA	

6. DESCRIPTION OF SAMPLE
One quart jar of soil

7. NAME AND ADDRESS OF ESTABLISHMENT WHERE SAMPLE WAS COLLECTED *(Include ZIP code)*

Dean Shaw
Rt. 2 Box 212
Rupert, ID 83350

8. PRODUCT NAME
NA

9. LOT OR CODE NUMBER(s)
NA

10. NAME AND ADDRESS OF PRODUCER *(If different from 7 above) (Include ZIP code)*
NA

11. RESULTS OF ANALYSIS

Method of Analysis	Ingredient	Found
HPLC Carbamate Screen	Oxamyl	None Detected

Analyst: Royal G. Schoen 11-24-92 R.S.
Oxamyl
HPLC: 5u C-18 @ 42°C, 1.0mL/min

Found
None Detected

MDL: .03ppm

12. LABORATORY COMMENTS

37868

13. SIGNATURE OF LAB SUPERVISOR	14. LABORATORY	15. DATE
[signature]	USDA	11-24-92

EPA Form 3540-5 (Rev. 5-76) PREVIOUS EDITIONS ARE OBSOLETE.

SAMPLE RECORD COPY

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

REPORT OF ANALYSIS

1. SAMPLE NO.	2. DATE COLLECTED
261235	10-23-92
3. REGION	**4. EPA REG. NO.**
10	NA
5. ESTABLISHMENT NO.	
NA	

6. DESCRIPTION OF SAMPLE
One quart jar of soil

7. NAME AND ADDRESS OF ESTABLISHMENT WHERE SAMPLE WAS COLLECTED *(Include ZIP code)*

Dean Shaw
Rt. 2 Box 212
Rupert, ID 83350

8. PRODUCT NAME
NA

9. LOT OR CODE NUMBER(s)
NA

10. NAME AND ADDRESS OF PRODUCER *(If different from 7 above) (Include ZIP code)*
NA

11. RESULTS OF ANALYSIS

Method of Analysis	Ingredient	Found
HPLC Carbamate Screen	Oxamyl	None Detected

Analyst: Royal G. Schoen 11-24-92
Oxamyl
HPLC: 5u C-18 @ 42°C, 1.0mL/min

	Found
	None Detected

MDL: .03ppm

12. LABORATORY COMMENTS

38768

13. SIGNATURE OF LAB SUPERVISOR	14. LABORATORY	15. DATE
		11 / 12

HISTORY OF OFFICIAL SAMPLE		1. SAMPLE NUMBER 251235	2. REGISTRATION NUMBER 92 1784
		3. PRODUCT Dove	
4. LABORATORY	WSDA Yakima		
5. DATE RECEIVED	11-12		
6. RECEIVED BY	NB		
7. RECEIVED FROM	Jurgens		
8. SENT VIA	bus		
9. SAMPLE CONDITION	good		
10. CONDITION OF SEALS	intact		
11. SEALED BY	same		
12. DATE SEALED	10-23		
13. PIECES RECEIVED	1		
14. PLACE STORED	freezer 2		
15. ASSIGNED BY	H. Moya		
16. ASSIGNED TO	R. Schoen		
17. DELIVERED BY	R. Schoen		
18. DATE DELIVERED	11/12/92		
19. NUMBER SUBS RECEIVED	1		
20. SUBS ANALYZED	1		
21. DATE SEAL BROKEN	11/12/92		
22. DATE RESEALED	11/12/92		
23. RESEALED BY	R. Schoen		
24. PLACE STORED	Freezer 2		
25. DATE JACKET SENT OUT	11-24-92		

26. REMARKS

39968

December 3, 1992

TO: **BOB SPENCER**

FROM: **JAMES BAKER**

SUBJECT: Possible pesticide poisoning at the Shaw Farm, Rupert, Idaho. Case 93-004

BACKGROUND

I have reviewed the history and documents available for the animal losses and possible pesticide poisoning at the Shaw Farm in September, 1993. I was particularly impressed by the throughness of the field investigation by Jim Jurgens. Based upon the this review I would not be able to conclude that organophosphate pesticide (OP) poisoning was the cause for the loss of dairy herd animals and the illness associated with other animals in the dairy herd. Several of the finding are potentially indicative but not exclusive to OP poisoning. Several of findings are more indicative of other types of toxicity. Unfortunately the clinical, laboratory, and field investigations focused only on a possible OP incident. The initial diagnosis became the final explanation without excluding other possible explanations, i.e., a ruling hypothesis.

ISSUES

The majors factors that may be suggestive of a different chemical exposure problem are:

1. The full stomach but with diarrhea (Heins, 1993).
2. Elevated temperature in sick animals noted by the attending clinician (Jurgens, 1993).
3. The thin walled petechiated bowel in an autopsied animal (Heins, 1993).
4. Unconfirmed OP laboratory finding (UIAL, 1993). **NOTE:** All analytical methods for oxamyl caution of matrix interferences and the need for confirmation. The reported finding appeared to be a close match just above the limits of detection (UIAL, personal communications, 1993).
5. Lack of local use or availability of oxamyl (Jurgens, 1993).
6. Identification of wood treatment products on the periphery of the stubble field (Jurgens, 1993).
7. The secession of symptoms following the fencing of the stubble field perimeter. Note: that the animals did not have unrestricted access to the potentially contaminated areas, **See:** Photos in case report (Jurgens, 1993).
8. Failure to perform the most useful diagnostic clinical laboratory tests for plasma or RBC cholinesterase, pseudocholinesterase, or urinary OP or other metabolites.

9. Reliance upon odor to signal an OP incident (Heins, 1993). The human olfactory sense is acute for all mercaptans, however, the ability to distinguish one mercaptan from the other is limited. From a metabolic point of view aromatic organic compounds and lower molecular weight polynuclear aromatic compounds result in the formation of a variety of mercaptans which might confuse the diagnostician.
10. The exposure appears to be related to a possible chronic exposure to an unknown chemical or pesticide, since symptoms (drop off in milk production) were noted as earily a two weeks prior to the death of the first animal (Heins, 1993).

None of the above issues provide a clear alternative explanation nor do the questions posed completely rule out the initial diagnosis, i.e., the ruling hypothesis might have been correct. It must be stated that several of the observations are generally indicative of OP poisoning. My concern is that no other explanations were sought and each test run would support only the ruling hypothesis of the initial diagnosis with very low certainty.

CONCLUSION

The diagnosis of an OP incident is weakly supported without sufficient information to suggest an alternative explanation. Chronic exposure to OP are most often results in symptoms indicating peripheral neuropathies. Without persistent symptoms it is unlikely that further diagostic, environmental or tissue testing would add any additional useful information concerning the incident from a toxicological or enforcement point of view. However, the farmer should be aware of potential exposures to wood treating chemicals and high molecular weight organic compounds associated with road repair.

I would conclude with the suggestion that this case be reviewed by the Division of Animal Industries.

41868

CASE REVIEW SUMMARY SHEET

CASE NUMBER: #ID 93004

COMPLAINANT NAME/ADDRESS: Dean Shaw
Rt. 4 350 E. 400 N.
Rupert, Idaho 83350
PHONE: 436-6101

APPLICATION COMPANY NAME/ADDRESS: Unknown

PHONE:

APPLICATOR'S NAME: Unknown
OPERATOR'S NAME: Unknown
INSPECTOR: Jim Jurgens
REVIEWER: Bob Spencer

DATE REVIEWED: December 24, 1992
DATE OF FINAL ACTION:
FINAL ACTION TAKEN: Still under investigation

SUMMARY OF CASE REVIEW: Dr. James Baker, ISDA Toxicologist, reported an incident involving the death of 2 cows allegedly from Oxamyl, active ingredient in Vydate. The University of Idaho discovered 0.07 ppm Oxamyl in one of the kidney samples submitted by the Veterinarian, Dr. Jeff Heins. There is no indication that Vydate was used in the area nor in the feed which was fed to the cattle. All cattle were given the same feed and only 4 cows were affected. The soil near some power poles had been hollowed out, much similar to what an animal would do looking for salt. The power company, Rural Electric, had treated the poles with Mitc-Fume and Timberfume for prevention of wood rot. **Further investigation is needed at this time to determine if these products may be related to the cows deaths.**

HARM VALUE

SURITY: ?
APPLICATOR TYPE: UNKNOWN
APPLICATION SITE: UNKNOWN

DAMAGED SITES	HARM VALUE	CHEMICAL/S
Cows	10	Unknown
Cows	3	Vydate

42968

Maintenance Accounting Processing Library Quit BOB/I | 12/24/92

Company ..... RURAL ELECTRIC CO, 11520
Primary App .. DARRELL MILLER, 11519
Telephone .... (208) 436-4781
Address ..... 110 S 100 W HWY 24
City ..... RUPERT State ID Zip 83350

Chem. $ 0.00
Other $ 0.00
Policies 0/0
Equipment 0/0

	Total Licenses	Active Licenses
Commercial Applicators	0	0
Commercial Operators	0	0
Limited Applicators	0	0
Consultants	0	0
Dealers	0	0
Chemigators	0	0
Mixer/Loaders	0	0
Total	0	0

E•mployees C•redits Q•uit

Individual and Company Maintenance | Division of Ag. Technology

Maintenance Accounting Processing Library Quit BOB/I | 12/24/92

Applicator Profile

Applicator ... DARRELL MILLER (#11519)
S.S. Number .. 518409470
Telephone .... (208) 436-3913
Address ..... 1306 D ST
City ..... RUPERT State ID Zip 83350

Chem. $ 0.00
Other $ 0.00
Policies 0/0
Equipment 0/0

(1) Exams/Training

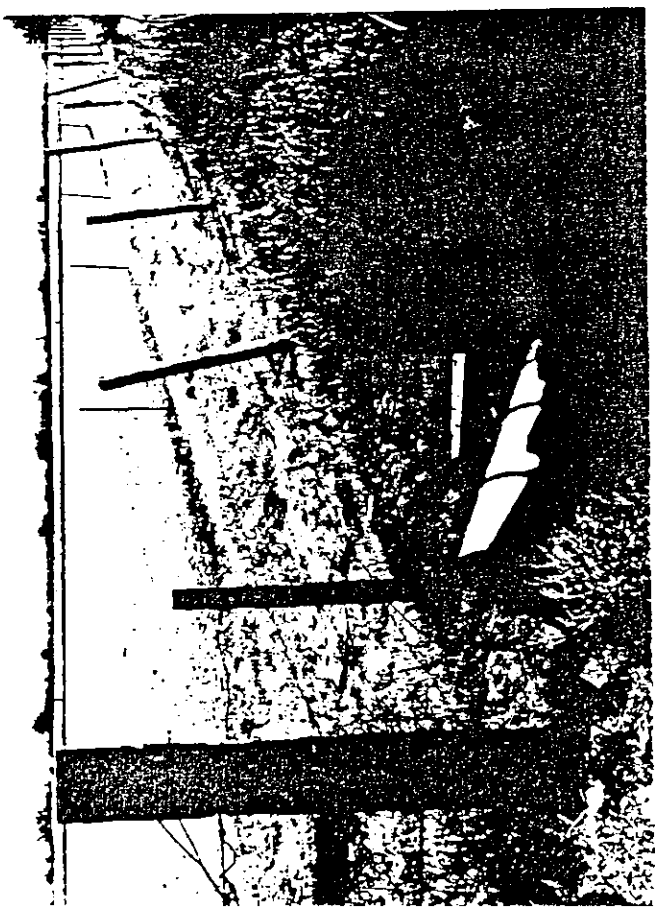
Wood Preservative	Orig	79%	10/29/86	Twin Falls

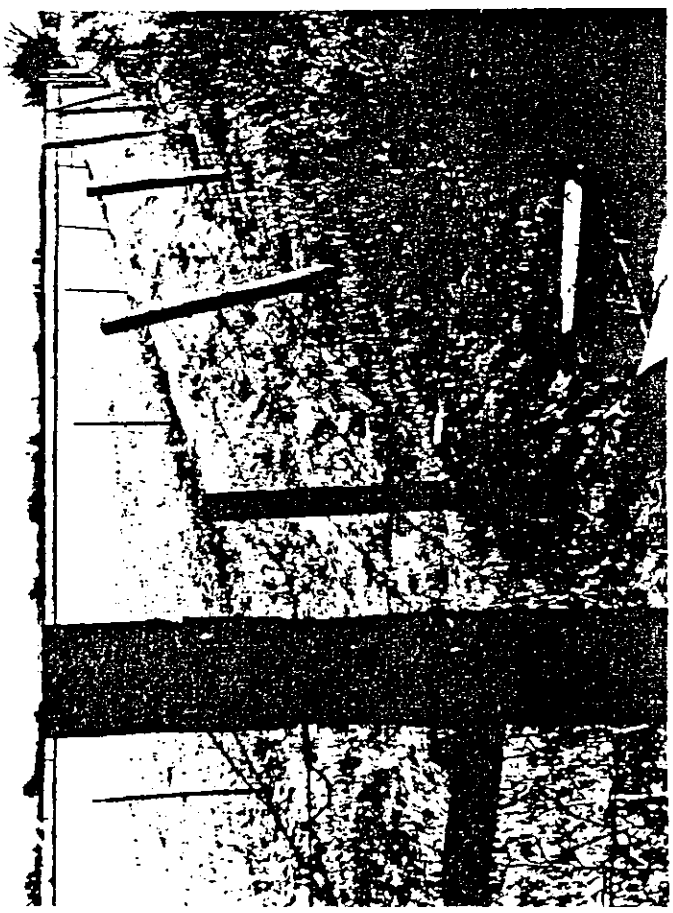
(0) Licenses

Ok

Press Any Key to Continue | Division of Ag. Technology

43768





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APPENDIX II

Results of DuPont Analysis of Containers Found in Chemigation Area

47968

This page has been claimed confidential. This document is releasable to persons who submit a signed “Affirmation of Non-Multinational Status” form.

A sm

APPENDIX III

Letter from University of Idaho
Analytical Laboratory Discussing
the Analytical Methods Used

49868

University of Idaho
Analytical Laboratory
Holm Center
Moscow, ID 83843
208-885-7081
FAX 208-885-8937

January 25, 1993

Dr. Joe McLory
Dupont Chemical Company
FAX #302-695-4296

Joe:

Here is a description of the pesticide analyses performed on the "Dean Shaw" tissues. If you have any further questions or comments, please feel free to call myself or Greg Moller (technical director) at the above telephone number.

Five grams of samples SP-53 9202378, were placed into Quorpak bottles. 100mls of 5% ethanol in ethyl acetate and 50g of sodium sulfate were added and homogenized for 2 minutes by a Polytron Macerator. The entire mixture was gravity filtered through shark skin filter paper. A 20ml aliquot was taken, 3 drops of 1% octanol keeper in acetone were added, placed into a Turbovap container and evaporated under N_2 at 15 psi and at 35 degrees C. The 20 ml aliquot was evaporated to less than 1 ml. The evaporated extract was brought up to 10 mls with 70:30 hexane:ethyl acetate and filtered through a 0.45um acrodisc. 5 mls of the extract were cleaned up by gel permeation chromatography. The entire eluate (200 mls) was evaporated to less than 1 ml with keeper and resuspended to 1ml with hexane. The 1ml of hexane extract was added to a hexane-conditioned silica gel spe column and eluted with the appropriate solvent. The collected fraction was evaporated again to less than 1 ml and resuspended to exactly 1ml and submitted for GC/NPD and HPLC analysis.

On October 1, 1992, the sample was run by GC/NPD (see parameters below) for a primary screen of Organophosphorus pesticides. No peaks indicating OP contamination were detected above EDLs. However, early eluting peaks (1-4 minutes) in the sample chromatogram of SP53-9202378 indicated possible carbamate contamination. Under the GC parameters of the VTOXOP.MTH method (see parameters below) ,carbamate standards in the past have been found to degrade by pyrolysis in the 240C injection port into early eluting multipeak components in an NPD chromatogram. Although no carbamate standards were run at the time of the analysis, an over-spike of sample SP53-9202380 containing a carbamate mix yielded several peaks in the period from 1-4 minutes while the non-spiked sample SP53-9202380 yielded no peaks from 1-4 minutes. Sample SP53-9202378 yielded peaks from 1-4 minutes, including a peak at 3.381 minutes as compared with a peak in the carbamate spike of SP53-9202380 at 3.380 minutes. On the basis of this pattern recognition

analysis for carbamate pyrolysis products, possible carbamate contamination was suspected.

Normally suspect carbamate positive samples are confirmed by post-column derivatization HPLC (instrument parameters similar to EPA 531.1). HPLC instrument failure precluded this approach at that time. On October 3, 1992, the sample was then rerun on the GC/NPD against a complete set of carbamate standards under the same conditions in the VTOXOP.MTH GC method. Though the October 3rd chromatogram of SP53-9202378 exhibited markedly different peak patterns than the October 1st chromatogram, the degradation of the carbamate oxamyl most closely compared with the peak pattern in SP53-9202378, both yielding a major peak at 1.091 and 1.094, respectively. On the basis of this information, results were calculated using a single point calibration method. Oxamyl was reported at 0.08 parts per million in sample SP53-9202378. Because of the failure of the HPLC the data quality objectives of the confirmation analysis were not met.

Gregory Moller, Technical Director
Patricia A. Talcott, Veterinary Toxicologist

51768

APPENDIX IV

Results From McKenzie Laboratories
Analysis of the Kidney Sample

INTEROFFICE MEMORANDUM

Date: 20-Jan-1993 09:45am
From: JOSEPH P MCCLORY
MCCLORJP
Dept: AG
Tel No: 695-1326

TO: Remote Addressee (MCKENKL AT A1 AT LDCU)

Subject: Kidney Sample

To Kati Koktavy

Kati,

Thank you for agreeing to analyse the Kidney samples from Idaho. Use the method by Holt and Pease (J. Agr. Food Chem., 24, 263, 1976) with modifications as you did for the oxamyl apple study AMR-2008-91.

As for sample prep I would not homogenize the entire sample because as you mentioned in our discussion there could be degradation by enzymes. To obtain a representative sample; I would cut off 4 to 5 pieces (approximately 10g each) of the frozen tissue from several different spots, as you were ready to begin the analysis.

It would probably be best to perform a method tryout set on a control sample which you purchase from a local market. We need to have recoveries performed as low as 0.01 ppm. A suggestion for a method tryout set might be a control and duplicate spikes at 0.01 and 0.1 ppm. If you have another plan based on your experience that would be fine. Call me and we can talk about it. Once you verify that the method works on the kidney proceed with the analysis of the sample from Idaho.

Thanks for your help on this one. If have any questions give me a call.

Joe

Joe McClory
Jan 20, 93

53768

McKENZIE
LABORATORIES

March 22, 1993

DuPont Agricultural Products
Joe McClory
Building 402, Experimental Station
P.O. Box 80402
Wilmington, DE 19880-0402

Dear Joe,

Enclosed is the data for the oxamyl kidney analysis. Included are the method tryouts and the kidney sample.

The following is a summary of the method spikes and kidney sample.

Extraction date: March 5, 1992
Analysis date: March 9, 1992

Sample Number	ppm Added	ppm Found	% Recovery
Reagent Blank	--	<0.010	--
Control	--	<0.010	--
Control	0.010	0.00740	74
Control Duplicate	0.010	0.00810	81
Control	0.020	0.0131	66
Control Duplicate	0.020	0.0126	63
Control	0.10	0.0675	68
Control Duplicate	0.10	0.0659	66
VSP92-53	--	<0.010	--
VSP92-53	--	<0.010	--

If you have any questions or comments regarding this data please feel free to call.

Sincerely,

Jean Butterfield

54768

L:DUPONT.JOE/HGF

MCKENZIE LABORATORIES
TELEPHONE LOG FORM

Sponsor: DuPont Representative: Joe McClory

Date: March 4, 1993 Time: 11:00am

Protocol Number: ———

Description: Kidney - Oxamyl

Discussion:	Alterations:
Run Kidney sample spikes at 0.01 ppm, all in duplicate.	and bracket with 0.02 ppm, 0.1 ppm - Run

Approval [signature]

MKL-F063 1/91

55768

Matrix/ Spike	Sample Number	Analyst Notes
Kidney	Reagent Blank	ømm = <0.01 ppm 1.
	control	ømm = <0.01 ppm 2.
0.5μg on 50g ✓ 0.5mL of 1μg/mL	Control + 0.01 ppm	7.0mm = 0.274ng / 50mg = 0.00548 x 1.35 = 0.00740 ppm = 74% 3.
0.5μg on 50g ✓ 0.5mL of 1μg/mL	Control + 0.01 ppm Duplicate	8.0mm = 0.300ng / 50mg = 0.00600 x 1.35 = 0.00810 ppm = 81% 4.
1μg on 50g ✓ 1mL of 1μg/mL	Control + 0.02 ppm	16.0mm ~~15.0mm~~ Mar 11, 1993 GB E = 0.487ng / 50mg = 0.00974 x 1.35 = 0.0131 ppm = 66% 5.
1μg on 50g 1mL of 1μg/mL	Control + 0.02 ppm Duplicate	15.0mm = 0.466ng / 50mg = 0.00932 x 1.35 = 0.0126 ppm = 63% 6.
5μg on 50g ✓ 5mL of 1μg/mL	Control + 0.1 ppm	62.0mm = 1.25ng / ~~50~~ 25mg Mar 11, 1993 GB E = 0.0500 x 1.35 = 0.0675 ppm = 68% 7.
5μg on 50g 5mL of 1μg/mL	Control + 0.1 ppm	60.0mm = 1.22ng / 25mg = 0.0488 x 1.35 = 0.0659 = 66% 8.
	Sample VSP 92-53 2378	ømm = <0.01 ppm 9.
	sample Duplicate	ømm = <0.01 ppm 10.
		11.
		Lab Hours = 7 Analysis Hours = 4 12. Total Hours = 11 x 65.00 = 715.00
		13. Non GLP
		14.
Times 1 Calculation	0.01ppm on 25g → 2.5mL = 0.10μg/mL = 0.10ng/μL	

Protocol #: —

Compound: Oxamyl

Method: PRM-034

Initial Wt: 50 grams

Final Wt: 25 grams

Final Vol: 2.5 mls Mallin

Solvent: Ethyl Acetate

Preweighing

Initials	Date
—	—

Extraction

Initials	Date
[illegible]	Mar 5, 1993

Analysis

Initials	Date
GB	March 9, 1993

Standards -- discard dates

Spikers March 11, 1993

Shooters March 16, 1993

Balance #: 5600570

Low Wt: 20.0 g 100 %

High Wt: 100.0 g 100 %

Samples

Date Received: Feb 10, 1993 [illegible]
Jan. 13, 1993 - [illegible]

Logbook Page: R14-14-con[trol]
R14-11 - sam[ple]

Preparation Date: —

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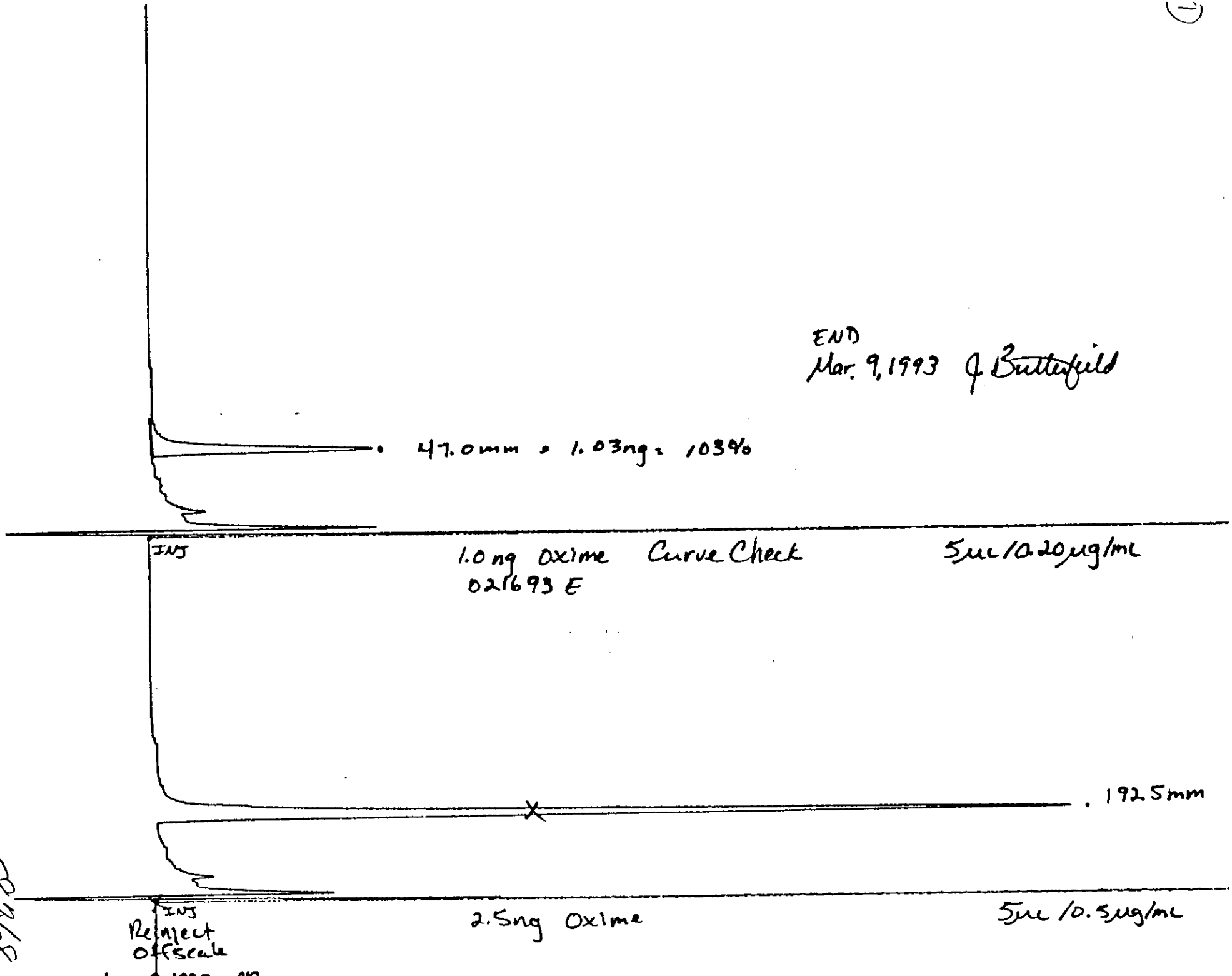
MKL – F031 12/91

McKENZIE LABORATORIES

GC Conditions

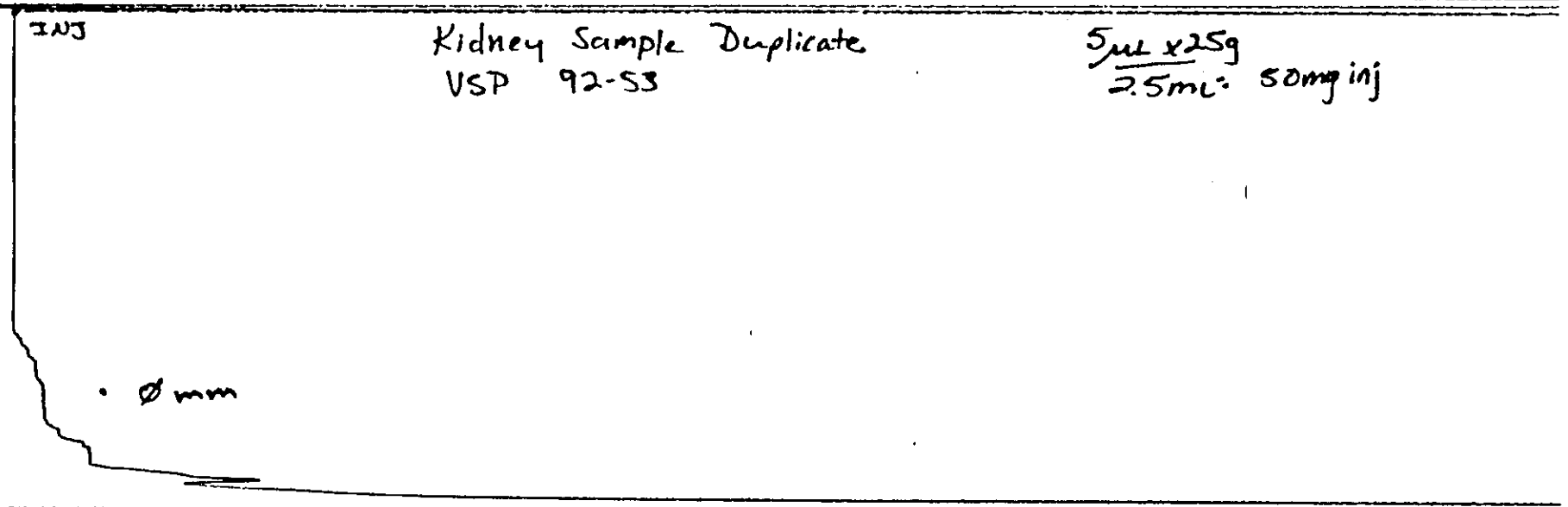
Type: Tracor 560
Serial No.: MKLH 00102
Protocol Number:
Compound: Oxamyl
Matrix: Kidney
Column No.: P18
Column size: 90 cm x 4 mm
Column packing: 10% DC200 Mar. 11, 1993 (T)
Detector Type: FPD S mode
Inlet Temp: 238°C
Detector Temp: 212°C
Oven Temp: 160°C
Chart Speed: 0.2 in/min
Retention Time: 3 min
Attenuation: 20^100
Flows:
Carrier: N_2 40 mL/min
Make-up:
Reaction:
Flame: H_2 75 mL/min Air 75 mL/min
Date: March 9, 1993
Analyst: [signature]

S1968


END
Mar. 9, 1993 J Butterfield
47.0mm = 1.03ng = 103%
INJ
1.0ng Oxime Curve Check
021693 E
5uL/0.20ug/mL
192.5mm
INJ
Reinject
Offscale
2.5ng Oxime
5uL/0.5ug/mL

FEET
LEFT

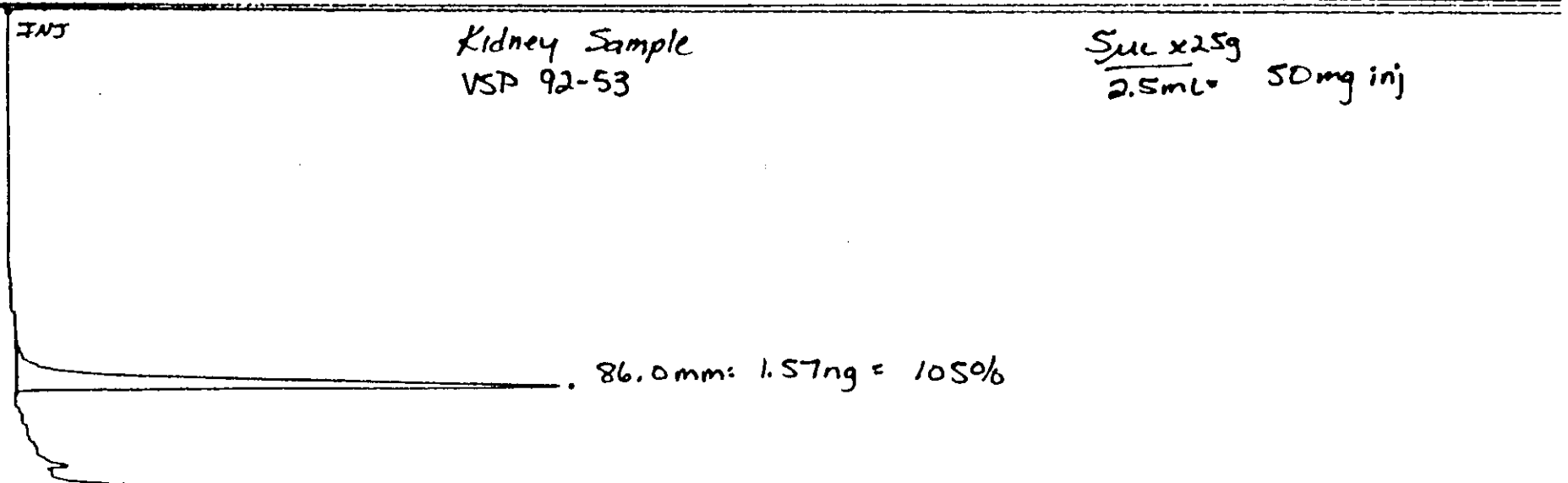
. ∅ mm



Kidney Sample Duplicate
VSP 92-53

5µL x25g / 2.5mL = 50mg inj

. ∅ mm



Kidney Sample
VSP 92-53

5µL x25g / 2.5mL = 50mg inj

. 86.0mm: 1.57ng = 105%

89645

0216 030193A
@ Mar 9, 1993 40

SD Mar. 9, 1993 QB

60.0 mm

INJ

Kidney Control +0.10 ppm Duplicate
x 2 Dilution

$\frac{5\mu L \times 25g}{5.0mL}$ = 25 mg inj

62.0 mm

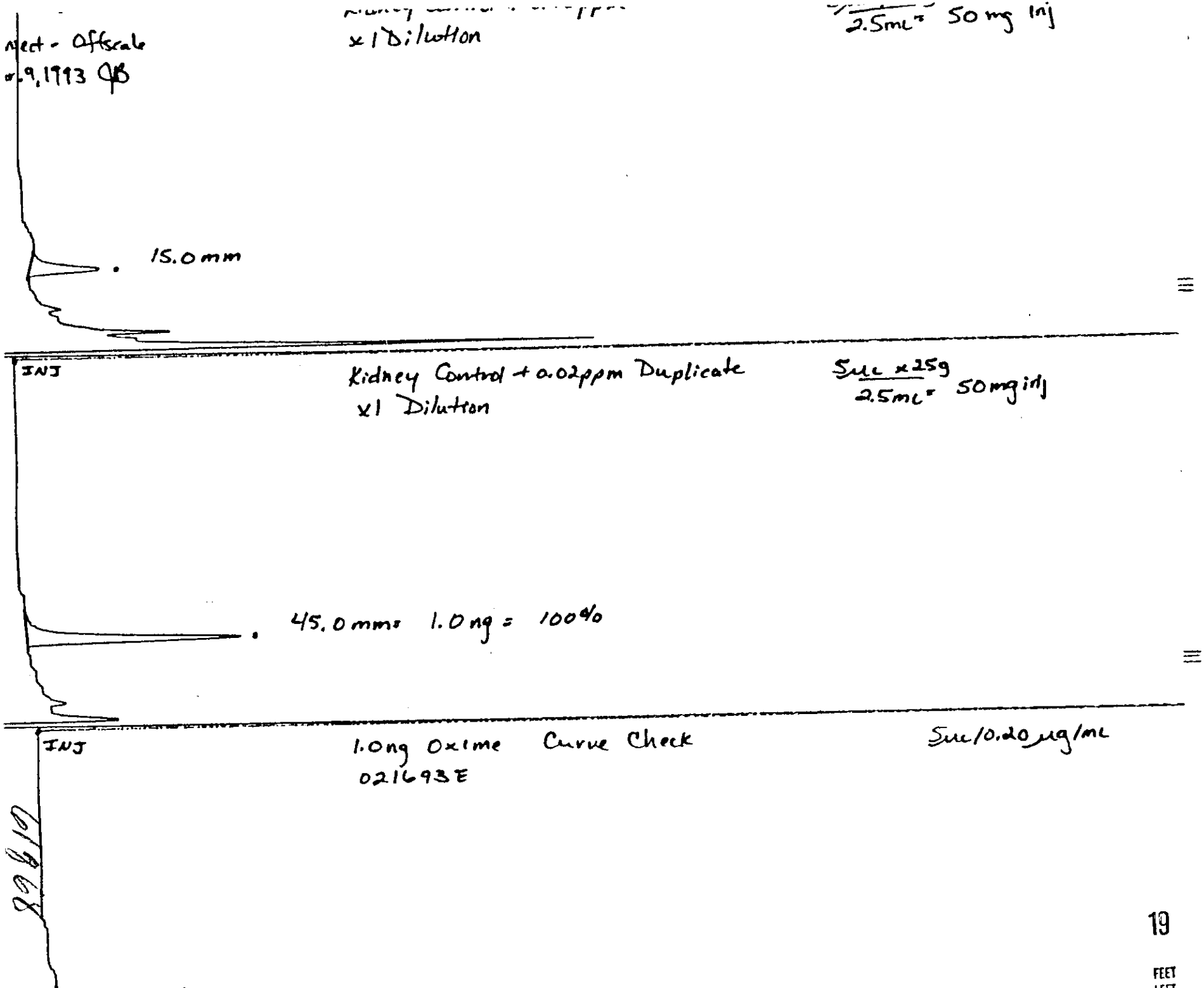
18

FEET
LEFT

INJ

Kidney Control + 0.10 ppm
x 2 Dilution

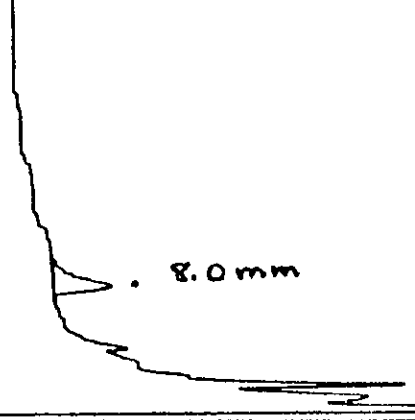
$\frac{5\mu L \times 25g}{5.0mL}$ 25 mg inj


Kidney Control + 0.02ppm Duplicate
x1 Dilution
5uL x 25g / 2.5mL = 50mg inj
15.0mm
INJ
Kidney Control + 0.02ppm Duplicate
x1 Dilution
5uL x 25g / 2.5mL = 50mg inj
45.0mm = 1.0ng = 100%
INJ
1.0ng Oxime Curve Check
021693E
5uL/0.20 ug/mL

INJ

Kidney Control +0.02 ppm
x1 Dilution

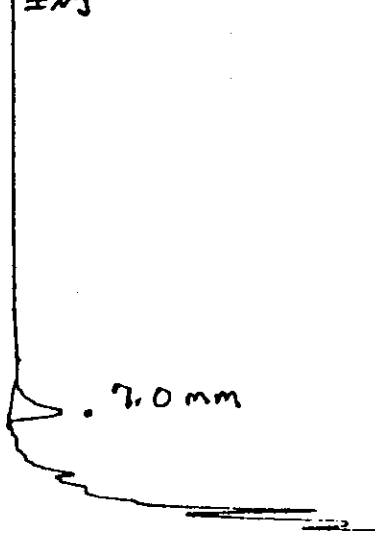
$\frac{5\mu L \times 25g}{2.5mL}$ = 50mg inj



INJ

Kidney Control +0.01ppm Duplicate
x1 Dilution

$\frac{5\mu L \times 25g}{2.5mL}$ = 50mg inj



INJ

Kidney Control +0.01 ppm
x1 Dilution

$\frac{5\mu L \times 25g}{2.5mL}$ = 50mg inj

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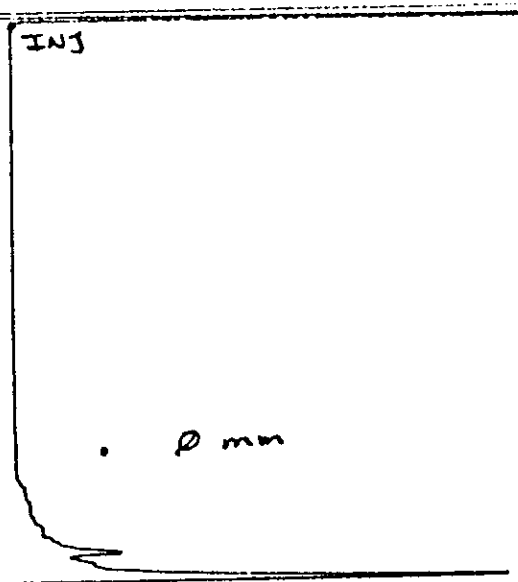


Kidney Control
x1 Dilution

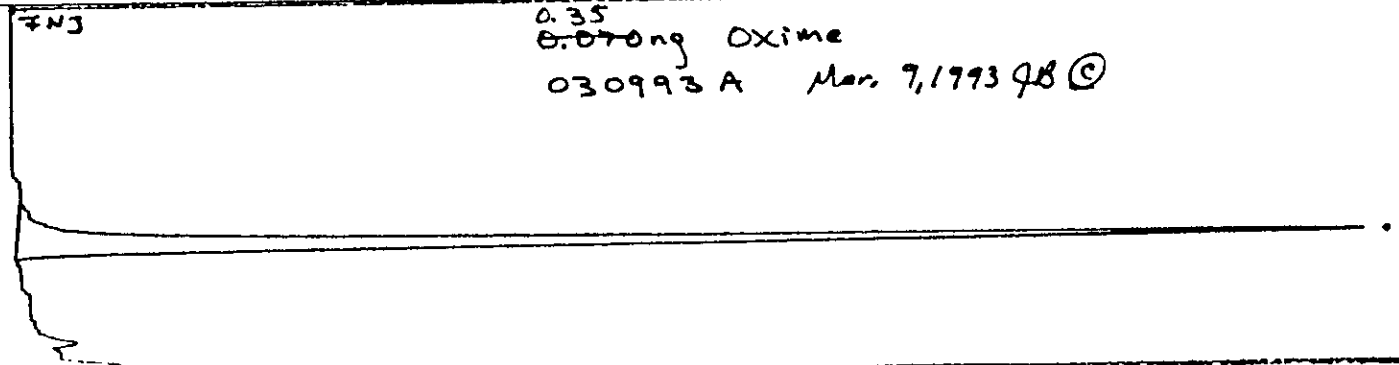
$\frac{5\mu L \times 25g}{2.5mL}$ = 50 mg inj

(6)

2

Reagent Blank
x1 Dilution

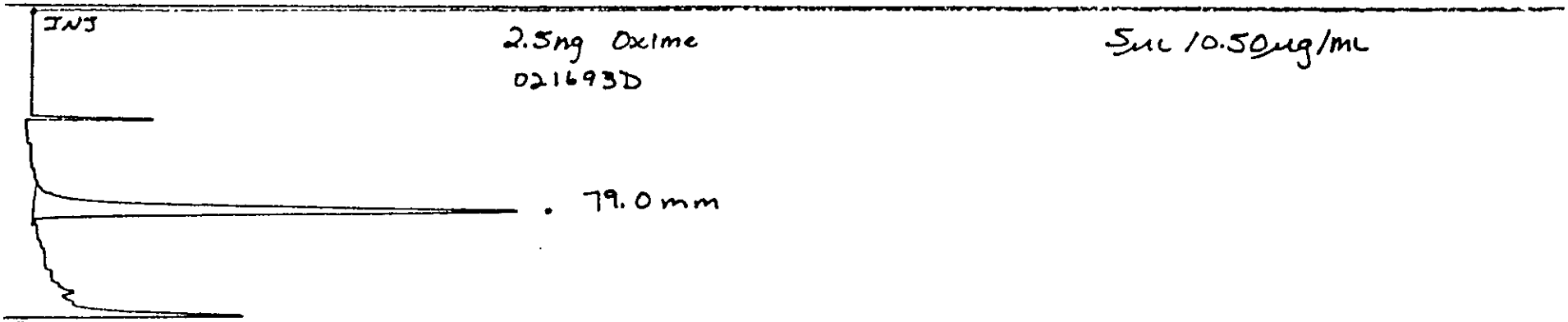
$\frac{5\mu L \times 25g}{2.5mL}$ = 50 mg inj



0.35
~~0.070~~ ng Oxime
030993 A Mar. 9, 1993 JB ©

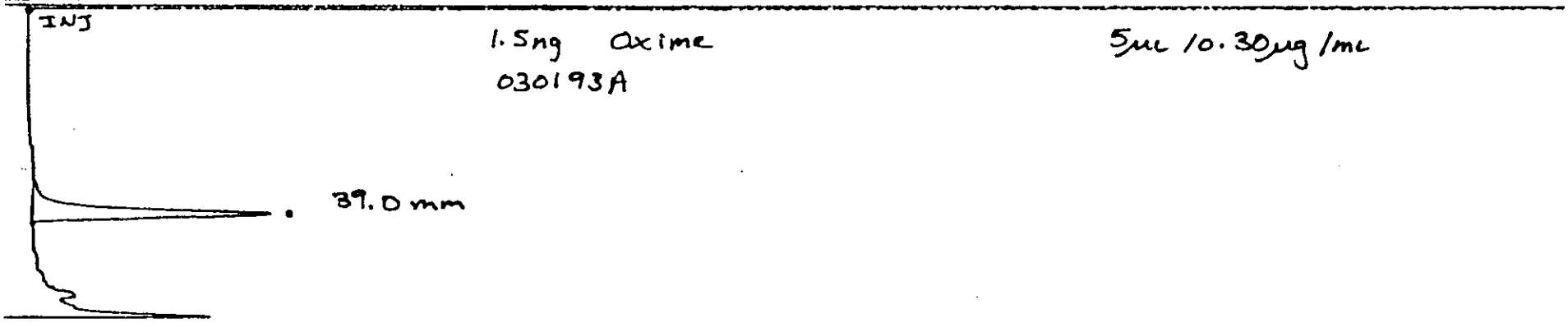
5uL/0.070nm ng/mL
Mar 9, 1993 JB

93168



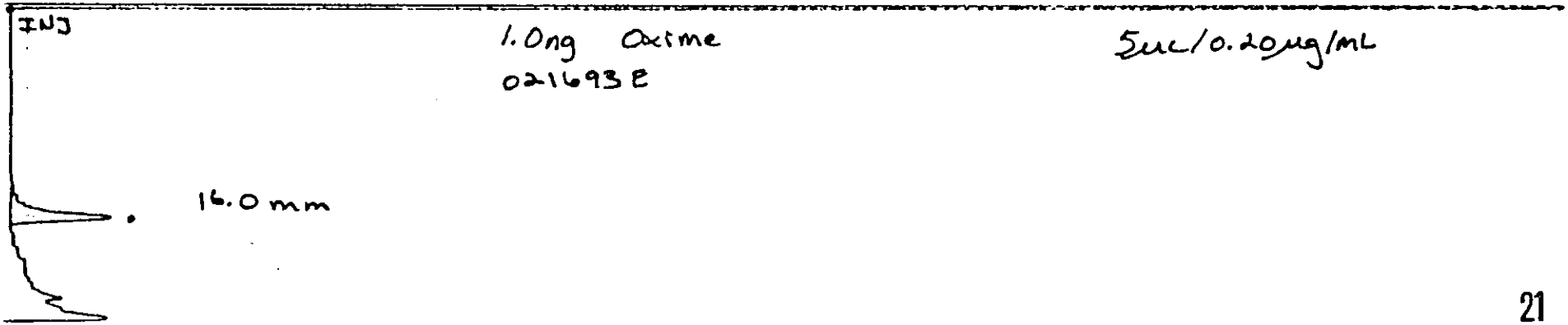
2.5ng Oxime
021693D

5uL / 0.50ug/mL



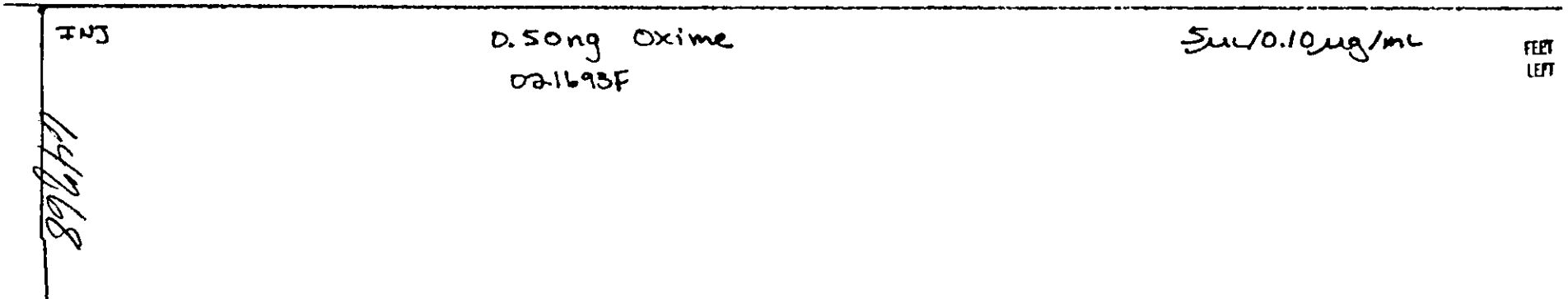
1.5ng Oxime
030193A

5uL / 0.30ug/mL



1.0ng Oxime
021693E

5uL / 0.20ug/mL



0.50ng Oxime
021693F

5uL / 0.10ug/mL

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21

APPENDIX V

Toxicity Data for the Chemicals Used to Treat the Utility Poles

65768

INTEROFFICE MEMORANDUM

Date: 08-Jan-1993 05:48pm
From: Fredrick O. O'Neal
ONEALFO
Dept: AG-REGIS
Tel No: 992-6270

TO: Charles S. Baer (BAERCS)

Subject: Cattle Poisoning Followup - Oxamyl

You asked if there was information on 3 products found in the vicinity of the cattle that died. Each of these substances is a pesticide (fungicide & fumigant):

	Oral LD50	Dermal LD50
Methyl Isothio cyanate (Vorlex)	489 mg/kg	961 - 1243 mg/kg
Sodium Methyl Dithio-carbamate (Metam-sodium)	1891 - 1985 mg/kg	> 3074 mg/kg
Chloropicrin*	250 mg/kg	

* Strong lachrymator and respiratory irritant; highly hazardous via inhalation.

Rlative to oxamyl, each of these would be considered less hazardous. The potential impact of consuming the mixture or the importance of other chemicals in the cattle deaths have yet to be determined.

Fred

66868

Attachment 3

Calculation of Henry's Law Constant for Oxamyl

67368

THE HENRY'S LAW CONSTANT FOR OXAMYL

The measured vapor pressure and aqueous solubility at 25°C were used to calculate the Henry's Law Constant for oxamyl.

The vapor pressure of oxamyl at 25°C is 3.84×10^{-7} mm Hg (AMR-1267-88) which is converted to 5.05×10^{-10} atmospheres by multiplying by the conversion factor of 1 atmosphere/760 mm Hg.

The aqueous solubility at 25°C is 282 g/liter and the molecular weight is 219.3 g/mole. The solubility of oxamyl, therefore, can be converted to 1.29 moles/liter by dividing the above value by the molecular weight. Using the conversion factor of $1000/m^3$, the solubility can be expressed as 1290 moles/m^3.

Since the Henry's Law Constant is the ratio of the vapor pressure to the aqueous solubility at the same temperature and for the same physical state of the compound, we calculated the Henry's Law Constant of oxamyl at 25°C to be 5.05×10^{-10} atmospheres/1290 moles-m^{-3} or 3.92×10^{-13} atmospheres-m^3/mole.

This value of the Henry's Law Constant indicates the oxamyl has negligible escaping tendency from a dilute aqueous solution. According to Lyman et al, if the Henry's Law Constant is less than about 3×10^{-7} atmospheres-m^3/mole, as it is for oxamyl, the substance is less volatile than water and could be considered essentially nonvolatile(1).

(1). W. J. Lyman, W. F. Reehl, and D. H. Rosenblatt, "Handbook of Chemical Property Estimation Methods", McGraw-Hill, Inc., 1982, p 15-15.

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